

Commute Profile 2004

Regional Report

September 2004

Prepared for:

The Metropolitan Transportation Commission's Regional Rideshare Program

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The preparation of this report has been financed in part by grants from the Federal Highway Administration, U.S. Department of Transportation. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation or MTC.

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Introduction

In the spring of 2004, the Regional Rideshare Program conducted the Bay Area's twelfth *Commute Profile* survey. *Commute Profile* is an annual region-wide telephone survey of commuters. The study is designed as a tool to help the Regional Rideshare Program and others better understand Bay Area commuters and their commute patterns. *Commute Profile* is unique among Bay Area surveys in that it focuses on commuters, their travel behavior and trends that emerge from year to year.

To track commute trends over time, *Commute Profile* has retained a group of core questions. The core questions include:

- Commute Modes
- Commute Distance and Time
- Use of HOV Lanes
- Influence of Employers and Employment Sites on Travel

Behavior

- Potential Use of Options to Driving Alone
- Awareness and Use of Commuter Information Services
- Demographic Information

Additional questions are rotated each year depending on current topics of interest to the Metropolitan Transportation Commission (MTC) and other partners who participate in the planning of *Commute Profile*. These rotating blocks of questions add an important element of flexibility to the study. This year's survey included additional "market research" oriented questions, such as sensitivity to costs, logistics of finding carpool partners, commonly used media and ethnicity. It also included an expanded look at the awareness and use of 511 services.

Publication of Findings

Past editions of *Commute Profile* have published all the data and analysis in a single "book" format. Data collected in the *Commute Profile 2004* survey are published in four separate reports:

- [Regional Report](#): this report analyzes a weighted data set representative of the region as a whole. It focuses on commute mode, distance, time, use of carpool lanes and telecommuting, changing commute conditions and the influence of the employment site.
- [County Profiles](#): this report is based on a sample of commuters who live in each of the nine Bay Area counties. Within this report a core set of the data are examined to provide a perspective on how commute patterns vary on a county-by-county basis.
- [Awareness and Use of Customer Service Programs](#): this report looks at awareness and customer use data for incentive programs, 511 services, the freeway service patrol program and the freeway callbox program.

- Customer Profile: this report focuses on identifying potential customers, how to reach them and to which messages they'll most likely listen.
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Methodology

The target population for *Commute Profile* is adults over the age of 16 who are employed full-time (30 hours or more) outside the home. Because this is a key customer group for the Regional Rideshare Program's services, *Commute Profile* focuses on them.

The sample size for *Commute Profile* has varied from year to year as a result of budget considerations, but the last six years have been consistent (Table 1). Larger sample sizes allow for more accurate regional data and for data that are more meaningful at the county level.

Table 1
Commute Profile Historical Summary

Year	Completed Questionnaires	Counties With Full Sample	Direct Costs Budget ¹
1992	1,600	1	\$22,245
1993	2,800	6	\$40,325
1994	3,200	7	\$44,600
1995	1,090	2	\$11,844
1996	3,450	8	\$41,152
1997		no survey	
1998	1,608	2	\$19,000
1999	3,628	9	\$42,000
2000	3,600	9	\$42,670
2001	3,600	9	\$44,740
2002	3,643	9	\$57,530
2003	3,600	9	\$51,883
2004	3,600	9	\$49,688

Between March 9 and May 17, 2004, a market research consultant administered telephone surveys to 3,600 Bay Area residents or 400 for each of the nine counties. Phone numbers were randomly generated, and calls were made in the evenings or on weekends. For the region-wide analysis, a weighted data set is used. The weighting is based on employed residents per county (Table 2). For the county-level analysis, the original data are used to provide the maximum sample size for each county.

¹This is the budget for acquiring the sample, conducting the telephone interviews and delivering a clean data set. It does not include questionnaire design, analysis, report preparation, graphic design or printing.

Table 2
 Regional Weighting Factors by County

County	Weighted Factor
Alameda	1.85
Contra Costa	1.21
Marin	0.34
Napa	0.16
San Francisco	1.14
San Mateo	0.97
Santa Clara	2.26
Solano	0.46
Sonoma	0.61
n=400 per county	

Commute Profile data are based on samples and, as with any sample, some of the year-to-year fluctuations are due to normal sampling error. County populations, based on the number of employed residents per county, vary from 68,500 (Napa) to 844,000 (Santa Clara).² The samples of 400 from each county have a normal sampling error of five percent and a confidence level of 95 percent associated with them. The region-wide population of employed residents is estimated to be 3,336,500 according to the 2000 census. The regional sample of 3,600 has a normal sampling error rate of two percent and a confidence level of 98 percent. This means if the survey was conducted 100 times, one would be confident 98 times out of 100, the characteristics of the sample would reflect the characteristics of the population within plus or minus two percent.

In some cases, *Commute Profile* examines sub-samples of the regional or county data sets where the sample sizes are smaller. Each table in *Commute Profile* includes the actual sample size in the format of (n=sample size). The normal sampling error increases as the sample size decreases as is shown in Table 3.

Table 3
 Normal Sampling Error Rates

Sample Size (n=)	Sampling Error	Confidence Level
3,600	2%	98%
400	5%	95%
270	6%	95%
200	7%	95%
150	8%	95%
120	9%	95%
100	10%	95%

Commute Mode

To develop a relatively complete view of commuters' travel modes, *Commute Profile* looks at the trip to work in terms of "primary,"

² Estimate of employed residents in 2004 are from the 2000 Census.

"connecting" and "occasional" modes. The "primary" mode of travel is defined as the method used for all or the part of the trip that covers the greatest distance. All respondents were asked if their entire commute trip was made using one mode or if their normal trip to work involved the use of additional or "connecting" modes. Finally, if the number of days per week an individual used their primary mode did not match the number of days per week worked, they were asked what other modes they used on an "occasional" basis.

The percentage of respondents who drive alone as their primary commute mode inched up between 2003 and 2004 from 63 percent to 64 percent, but it is still considerably lower than the 68 percent who were driving alone in 2002 (Table 4). The 64 percent drive-alone rate is the second lowest in the last six years. Other changes in commute mode between 2003 and 2004 were also subtle; BART use is up and both carpooling and telecommuting declined (carpooling by two percent and telecommuting by one percent). BART increased from three percent to five percent between 2002 and 2003. 2004 is the first decline in the percentage of commuters carpooling in some time. Carpool use had been steadily increasing from 14 percent in 1999 to 18 percent in 2003. The percentage of commuters walking to work increased from two percent to three percent between 2002 and 2003; the 2004 data show that higher of level of walking continuing.

Table 4
 Primary Commute Mode

Mode	2004	2003	2002
Drive Alone	64%	63%	68%
Carpool ³	16%	18%	17%
BART	6%	5%	3%
Bus	5%	5%	5%
Walk	3%	3%	2%
Telecommute	1%	2%	1%
Bicycle	1%	1%	1%
Light Rail	1%	1%	<1%
Caltrain	1%	1%	1%
Motorcycle	1%	1%	<1%
Vanpool	<1%	<1%	1%
Ferry	<1%	<1%	<1%
n=	3,607	3,609	3,614

Approximately 13 percent of respondents indicated their normal trip to work involved the use of more than one mode. The most popular connecting modes are driving alone and riding the bus (Table 5). Riding BART, walking, carpooling, bicycling and riding light rail systems are the next most popular group of connecting modes. The results are similar to last year both in terms of the percentage of commuters using connecting modes and

³ Respondents who initially indicated they drive alone, but later indicated they have others in the car with them three to five days per week were reclassified as carpools.

the type of modes used—the seven most commonly used connecting modes are the same this year as last year.

Table 5
Connecting Modes

Mode		Mode	
Drive Alone	4%	Light Rail	1%
Bus	3%	Caltrain	<1%
BART	2%	Motorcycle	<1%
Walk	1%	Ferry	<1%
Carpool	1%	Other	<1%
Bicycle	1%	None	87%
<i>n=3,607</i>			

When primary and connecting modes are combined, a view of the journey to work is provided that gives equal weight to each mode regardless if it is used for the whole trip or just a portion of the trip. For an individual who drives to BART, their trip will show up twice—once in the drive-alone category and once in the BART category. Because one person's trip to work can include multiple modes, the total number of trips represented here is greater than the number of trips represented in the table that shows only primary trips. There are some differences between this combined view and the view of just the primary mode of travel. The percentage of trips made driving alone decreases by about four percentage points (from 64 percent to 60 percent) and the percentage of carpooling drops by one percent (Table 6). The percentage of bus, BART, bicycle, light rail and Caltrain trips increase when primary and connecting modes are combined.

Table 6
Primary and Connecting Modes Combined

Mode		Mode	
Drive Alone	60%	Telecommute	1%
Carpool	15%	Caltrain	1%
Bus	7%	Motorcycle	1%
BART	7%	Vanpool	<1%
Walk	3%	Ferry	<1%
Bicycle	2%	Other	1%
Light Rail	2%		
<i>n=3,607</i>			

An occasional mode is a completely separate mode used on days when commuters do not use their primary travel mode for their trip to work. Approximately seven percent of respondents indicated they use a different method of commuting on an occasional basis. This level is consistent with previous years. Driving alone and telecommuting are the most popular occasional modes (Table 7).

Table 7
 Occasional Commute Modes

Mode		Mode	
Drive Alone	2%	Walk or Jog	1%
Telecommute	2%	Light Rail	<1%
Carpool	1%	Caltrain	<1%
Bus	1%	Ferry	<1%
BART	1%	Other	<1%
Bicycle	1%	None	93%
			n=3,607

The primary and connecting modes in Table 8 have been clustered in four groups (drive alone, carpool, transit and other⁴) for easier comparisons. The table shows the types of connecting modes used based on primary mode for the 13 percent of commuters who use a connecting mode. For example, of those commuters whose primary mode is driving alone (first row), 22 percent drive to meet a carpool, 55 percent drive to catch transit and 22 percent drive and then use an "other" mode to complete their journey to work.

Transit users were the most likely to use connecting modes on their normal commute trip (60 percent use a connecting mode), and they are most likely to use multiple transit modes. Drive-alone commuters were the least likely—only four percent use a connecting mode. Nineteen percent of "other" mode users and nine percent of carpoolers use connecting modes. Transit was the most frequently used connecting mode in all four modal categories.

⁴ "Drive Alone" includes motorcycles and taxis; "carpool" includes vanpools; "transit" includes buses, trains and ferryboats; and "other" includes bike, walk and telecommute.

Table 8
Primary Mode by Connecting Mode

Primary Modes	Connecting Modes			
	Drive Alone	Carpool	Transit	Other
Drive Alone <i>4% of drive-alones use a connecting mode</i> <i>n=79</i>	--	22%	55%	22%
Carpool <i>9% of carpoolers use a connecting mode</i> <i>n=51</i>	25%	11%	50%	14%
Transit <i>60% of transit users use a connecting mode</i> <i>n=276</i>	38%	7%	44%	12%
Other <i>19% of "other" mode users use a connecting mode</i> <i>n=40</i>	40%	4%	44%	12%

Grouping commute modes into clusters makes it easier to view patterns which emerge over time. The biggest change in recent years is the decline in the drive-alone rate (Table 9). The drive-alone rate had been fairly steady prior to 2003 with a gradual upward trend; the drop over the last two years shows a change in the long-term trend. Increases noted last year in transit use and "other" mode were substantiated by continued high levels this year. The decrease in carpool use from 2003 to 2004 runs contrary to the trend of increased carpool use that had been emerging since 1998.

The increase in transit over the last two years appears counter to the trend of generally lower overall ridership on transit reported by operators. However, it is possible that the percentage of commuters using transit can increase while overall ridership decreases. The fact that employment has declined would lower absolute ridership levels, but not necessarily lower the percent of commuters riding transit. For "other" modes, the last two years mark an upward movement of a trend line which has been flat over the previous five years.

Table 9
Clustered Modes Over Time⁵

Mode	1993	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
Drive Alone	65%	66%	62%	64%	71%	67%	68%	69%	69%	64%	65%
Carpool	17%	17%	19%	17%	14%	15%	14%	17%	18%	18%	16%
Transit	12%	12%	12%	13%	11%	14%	14%	10%	10%	12%	13%
Other	7%	5%	7%	6%	3%	4%	5%	4%	4%	7%	6%
n=	2782	3201	400	3450	1200	3669	3608	3616	3614	3609	3607

County Comparisons

There are a number of differences in commute modes between commuters who live in different counties—mostly related to the options that are available. The availability of transit and parking, as well as travel distances, appears to influence commuters' choices. Consistent with previous years, the percentage of commuters driving alone is highest in Napa and Sonoma counties (Table 10). San Francisco commuters are the least likely to drive alone to work; they have the highest transit and the only double-digit "other" mode use. They also have the lowest carpooling rate while Solano residents have the highest carpool rate; Santa Clara has the second highest carpooling rate. Also consistent with previous years, transit use is distinctly lower in Napa, Santa Clara, Solano and Sonoma counties.

Table 10
Commute Modes by County

County	Drive Alone	Carpool	Transit	Other	n=
Alameda	63%	17%	16%	5%	400
Contra Costa	66%	15%	17%	3%	401
Marin	63%	16%	13%	9%	400
Napa	79%	15%	1%	6%	400
San Francisco	38%	12%	37%	14%	401
San Mateo	68%	18%	9%	5%	402
Santa Clara	75%	17%	4%	4%	400
Solano	71%	22%	4%	4%	400
Sonoma	75%	16%	4%	6%	400
Region	64%	16%	13%	6%	3,607

Commute Distance

Trip distance has remained fairly constant since 1992—varying from a low of 14 miles to a high of 17 miles (Table 11). For the last three years, average trip distance has remained unchanged at 16 miles one-way. Long-distance commutes are often

⁵ It is important to note that sample sizes in 1995 and 1998 (because of budget considerations) were smaller; data from these two years should be viewed with added caution.

sensationalized in the media but data collected here do not support increasing commute distances for most commuters. However, *Commute Profile* does not sample residents from counties beyond the nine core counties. Commuters from counties such as San Joaquin and Stanislaus, who may be making longer trips, are not included in this study. Even if commuters from some of these outlying counties were included in the study, they comprise a small percentage of total commuters and would not dramatically influence results on a regional basis.⁶

Table 11
Average Regional Commute Distance in Miles (one-way)

1992	1993	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
16	15	14	15	15	17	17	17	17	16	16	16
1600	2782	3201	400	3188	1171	3572	3608	3615	3614	3,497	3,476

Table 12 provides additional insight into the distances commuters travel to get to work each day. Long-distance commuters (those traveling more than 41 miles each way) are the minority—only seven percent are in this category. At the other extreme, short distance commuters (those traveling five miles or less) comprise the largest group. The flat trend line shown by average commute distances in Table 11 is clearly reflected by the lack of any upward or downward trends in the grouped mileage categories.

Table 12
Commute Distance Over Time

One-way miles	1996	1998	1999	2000	2001	2002	2003	2004
0 - 5 miles	33%	25%	28%	28%	28%	30%	28%	29%
6 - 10 miles	20%	20%	20%	17%	20%	20%	20%	20%
11 - 20 miles	25%	28%	26%	26%	25%	27%	26%	26%
21 - 40 miles	16%	21%	19%	22%	20%	18%	20%	19%
41 miles +	7%	7%	8%	7%	6%	6%	7%	7%
n=	3,188	1,171	3,572	3,608	3,615	3,614	3,493	3,476

Short-distance commuters are the least likely to drive alone (Table 13) and by far the most likely to participate in "other" modes which include biking and walking. Transit usage is most common among commuters in the 21-40 mile range and short-distance

⁶ For example, about 13,000 San Joaquin and Stanislaus residents commute to Santa Clara and San Mateo counties—common long-distance commutes. This is less than one half of one percent of Bay Area commuters. (Source: 2000 Census, compiled by KnightRidder)

commuters. Carpooling is highest among commuters who travel 6-10 miles each way. Driving alone is slightly more common among mid-distance (11-20 miles), but with the exception of the 0-5 mile range, varies little between range categories. Intuitively, one might expect the longest-distance commuters to be more likely to carpool (because they have the greatest potential benefit), but that is not the case. These long-distance commuters who are driving alone are an excellent target market for carpooling, vanpooling and telecommuting.

Table 13
Commute Mode by Distance

	Drive Alone	Carpool	Transit	Other
0 – 5 Miles n=987	60%	14%	13%	14%
6 – 10 Miles n=696	68%	20%	9%	3%
11 – 20 Miles n=896	71%	17%	11%	1%
21 – 40 Miles n=683	67%	15%	17%	1%
41 Miles or more n=231	67%	17%	11%	5%
<i>Average miles</i>	<i>17 miles</i>	<i>16 miles</i>	<i>17 miles</i>	<i>8 miles</i>

County Comparisons

Contra Costa and Solano County residents travel the longest distances to work (Table 14). Although the difference is small, this is the first year Contra Costa residents have a longer average commute trip than Solano residents. Over the last five years, Solano residents' commute distance has been declining. The percentage of Solano residents living and working within the county have increased dramatically over the past few years—since 2001 it has increased by almost 30 percent. Contra Costa and Solano commuters travel almost twice the distance of San Francisco commuters. San Francisco and Santa Clara commuters have the shortest trips. In 2003, Napa commute distance appeared to be declining—it seems to have been more of an aberration than a trend as commute distances have moved closer to 2002 levels this year.

Table 14
Average One-way Commute Miles by County

County	1996	1999	2000	2001	2002	2003	2004
Contra Costa	19	21	22	23	20	22	22
Solano	23	27	27	25	25	23	21
Sonoma	19	21	20	20	19	18	18
Marin	16	17	18	18	17	17	17
Alameda	16	17	17	17	16	16	17
Napa	19	19	20	18	17	14	16
San Mateo	16	15	16	16	15	15	15
Santa Clara	14	14	14	12	14	15	14
San Francisco	9	11	12	13	11	10	12

Commute Time

Respondents were asked to estimate their "door-to-door " travel time to work. In 2002, the trend of increasing travel time to work took a dramatic turn in the other direction—decreasing from 34 to 30 minutes (Table 15). Travel times have mirrored the increases and decreases in economic activity. Economic activity hit its peak in 2000; as the economy started to cool down in 2001, travel times began to decrease and have continued to do so through 2003. In 2004, as job growth has picked-up, the decline in travel times has leveled off and even begun to increase slightly.

Based on the data gathered on distance and time, travel speeds were calculated. Following the same pattern as travel time, travel speeds (which had been increasing in 2002 and 2003) have leveled off and begun to decrease slightly (Table 15). Respondents' perceptions of commute conditions have also followed this same pattern. Supporting this trend, fewer respondents in 2004 indicated their commute had improved and more indicated it was either the same or somewhat worse (Table 27).

Table 15
Travel Time, Distance and Speed

	1992	1993	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
Travel Time (minutes)	28	27	27	27	28	32	30	35	34	30	29	30
Trip Distance (miles)	16	15	14	15	15	17	17	17	17	16	16	16
Travel Speed (mph)	35	34	32	34	33	33	33	30	30	32	33	32

Auto-based modes and non-auto modes have considerably different travel characteristics (Table 16). The distance and time characteristics of drive-alone and carpool commuters are very similar. Commuters who drive alone tend to have the fastest travel speeds with carpoolers not far behind. Carpoolers who regularly use carpool lanes on their commute travel longer distances (29 miles each way) at about the same speed as those

driving alone. Transit users travel about the same distance as auto-based commuters but do so at slower average travel speeds. Transit riders travel longer distances than "other" mode commuters but do so at about the same speed.

Table 16
Travel Characteristics by Primary Mode

Mode	Distance	Time	Speed
Drive Alone <i>n=2,318</i>	17 miles	27 minutes	38 mph
Carpool <i>n=577</i>	16 miles	29 minutes	33 mph
Transit <i>n=461</i>	17 miles	47 minutes	22 mph
Other <i>n=194</i>	8 miles	22 minutes	22 mph

County Comparisons

Solano residents have the fastest estimated travel speeds on their daily commutes (Table 17). Napa and Sonoma residents have the next fastest speeds. Commuters who live in San Francisco have the slowest estimated travel speeds. Changes between 2003 and 2004 were minimal—commuters from most counties either maintained the same average speed or changed by one mile per hour. Looking all the way back to 1996 Contra Costa is the only county where commute speeds for residents have not decreased.

Table 17
Estimated Travel Speed (miles per hour) by County

County	1996*	1999	2000	2001	2002	2003	2004	Change 1996-2004
Solano	44	48	37	37	39	41	40	-4
Napa	43	45	38	39	37	37	37	-6
Sonoma	43	41	35	35	36	37	37	-6
San Mateo	37	34	31	30	34	35	36	-1
Contra Costa	35	39	32	33	34	34	35	=
Santa Clara	36	32	29	26	32	35	34	-2
Alameda	35	34	30	28	30	33	33	-2
Marin	31	33	27	28	30	32	30	-1
San Francisco	21	25	20	24	23	21	23	-2

*No survey was done in 1997 and the 1998 survey did not have a sample for each county.

Start Time and Flexibility

Predictably, the highest percentage of respondents starts work between 8 a.m. and 8:59 a.m. (Table 18). More than 80 percent of respondents start work during the morning peak period (6 a.m. to 9:59 a.m.). Since many of the survey calls were made in the evening (some were also made on weekends), people who start work between 4 p.m. and 11:59 p.m. may be underrepresented in this sample. Respondents were also asked about the flexibility of their arrival and departure times (Table 19). Arrival times at

home are somewhat more flexible than arrival times at work. Over 60 percent of commuters indicated they had some flexibility in their arrival times at home or work.

Table 18
Start Work Time

Start Time	Percent
6:00 – 6:59 am	8%
7:00 – 7:59 am	23%
8:00 – 8:59 am	33%
9:00 – 9:59 am	19%
10:00 am – 3:59 pm	11%
4:00 pm – 11:59 pm	0%
Midnight – 5:59 am	5%
Varies	2%
<i>n=3,607</i>	

Table 19
Flexibility of Arrival Times at Work and Home

	Arrival Time at Work	Arrival Time at Home
Very flexible	24%	25%
Somewhat flexible	34%	39%
Neutral	11%	12%
Inflexible	19%	16%
Very inflexible	12%	8%
<i>n=</i>	<i>3,593</i>	<i>3,592</i>

Carpool Lane Use

Just over 40 percent of respondents have a carpool lane along their route to work. Of those who have a carpool lane along their route to work, about 21 percent use the lane regularly to get to work. This translates to about nine percent of all commuters using a carpool lane; most of them (87 percent) save time by using the lane. The amount of time respondents estimated saving has continued to decline from a high of 23 minutes in 2001 (Table 20). The 15 minutes saved in 2004 was the smallest time-savings estimated since 1995. As noted the last couple years, the decreasing amount of time saved by using the carpool lane may be related to the adjacent mixed-flow lanes being less congested than they were three or four years ago.

Table 20
Minutes Saved (one-way) by Using Carpool Lane

	1993	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
Minutes Saved	14	16	14	16	16	16	21	23	16	17	15
<i>n=</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>196</i>	<i>289</i>	<i>190</i>	<i>93</i>	<i>295</i>	<i>275</i>	<i>250</i>

Also consistent with the decrease in time saved this year and the downward trend over the last couple years was a decrease in the percentage of respondents who indicated the carpool lane influenced their decision to carpool or use transit (Table 21). In addition to fewer respondents indicating the carpool lane influenced their decision to carpool or use transit, an increasing percentage of commuters (63 percent) indicated they would continue with their carpool or transit mode even if the carpool lanes did not exist. Evidence here points to carpool lanes be a "less effective" motivator as overall congestion decreases. The percentage of respondents indicating they would no longer carpool or use transit without a carpool lane is at its lowest level.

Table 21
Carpool Lane and Commute Mode Choice

	1999	2000	2001	2002	2003	2004
<i>Did a carpool lane influence your decision to use an HOV mode?</i>						
Yes	60%	60%	69%	51%	51%	47%
No	40%	39%	31%	46%	47%	49%
Not Sure	0%	1%	0%	3%	2%	3%
n=	289	190	118	358	346	305
<i>Would you continue to use an HOV mode without a carpool lane?</i>						
Yes	64%	66%	60%	58%	61%	63%
No	26%	22%	32%	29%	25%	20%
Not sure	9%	12%	8%	13%	15%	17%
n=	289	190	118	358	345	301

County Comparisons

Santa Clara and Marin residents were most likely to report having a carpool lane along their route to work (Table 22). Napa County residents continue to have the lowest level of access to carpool lanes. Of those commuters who have a carpool lane along their route, Solano, Napa and Alameda residents are the most likely to use it. Solano County commuters make the longest trips and many of them travel along the congested Interstate 80 corridor where the carpool lane offers a significant advantage. In three counties (Napa, Contra Costa and Alameda), 90 percent or more of respondents indicated the carpool lane saves them time. Over 80 percent of respondents who used the carpool lanes from all counties indicated they save time by doing so.

The question which elicited the most varied response (when looked at on a county-by-county basis) addressed the influence of the carpool lanes on a respondent's decision to carpool or use transit. Alameda and Contra Costa residents were most heavily influenced by the presence of carpool lanes on their route to work. Santa Clara county residents were the least likely to indicate the carpool lane influenced their choice of travel mode.

Table 22
Carpool Lane Influence by County

	Access To Carpool Lane	Use of Carpool Lane	Save Time	Influence Decision
Alameda	49%	25%	92%	64%
Contra Costa	49%	18%	97%	77%
Marin	54%	20%	88%	59%
Napa	10%	27%	100%	46%
San Francisco	21%	23%	83%	29%
San Mateo	24%	16%	88%	29%
Santa Clara	56%	17%	83%	26%
Solano	27%	37%	82%	55%
Sonoma	31%	20%	83%	40%
<i>n=</i>	<i>3,513</i>	<i>1,251</i>	<i>265</i>	<i>260</i>
Region	42%	21%	87%	49%

Carpool Dynamics

The average carpool size is 2.6 persons (including the driver). If vanpoolers are included in the calculation the average increases to 2.8 persons per vehicle. For vanpools only, the average is nine persons per van. Household members and co-workers are the most common types of participants in carpools (Table 23). Casual carpoolers (i.e., carpools which are formed near transit stops on an informal basis with different drivers and passengers each day) make up approximately four percent of carpools.

Table 23
Carpool Make Up

	2003	2004
Household Members	33%	40%
Co-workers	42%	39%
Casual Carpool	8%	4%
Non-Household Relative	7%	5%
Friends or neighbors	6%	11%
Other	4%	2%
	<i>n=222</i>	<i>n=245</i>

Approximately 70 percent of carpoolers have been participating in a carpool for more than a year (Table 24). Over 40 percent have been participating for more than two years. The most common meeting location is at the home of one of the participants (Table 25). Only seven percent of carpools use a Park and Ride Lot.

Table 24
Carpool Duration

Less than a month	3%
One month to less than six	14%
Six months to less than one year	14%
More than one year but less than two	16%
2 - 5 years	36%
6-10 years	14%
11 or more years	3%
n=245	

Table 25
Where Do You Meet Your Carpool or Vanpool

Home	73%
Varies	12%
In Route	9%
Park and Ride Lot	7%
Daycare or school	0%
n=245	

Telecommuting

About a quarter (24 percent) of respondents have the option to telecommute rather than travel to work. This has been very consistent over the last four years with between 22 percent and 24 percent of employees having the option to telecommute. About 85 percent (up from 77 percent in 2003) of respondents who have the option to telecommute take advantage of it. Of those who telecommute:

- 20 percent do so one day per month,
- 48 percent do so two to four days per month,
- 32 percent do so five or more days per month.

The average telecommuter does so about four and a half (down from five and a half in 2003) days per month. This is a little lower than in previous years where the average was between five and six days per month.

Since one goal of telecommuting is to reduce vehicle trips, respondents were asked if they made more, the same or fewer trips on days when they telecommute compared with days when they commuted to work. In 2004, about seven of 10 telecommuters reported making fewer vehicle trips (Table 26). Although there have been changes from year to year, the long-term pattern is clear—most telecommuters make fewer trips on days they telecommute.

Table 26
Trips Made on Telecommuting Days

	1998	1999	2000	2001	2002	2003	2004
Fewer	60%	67%	74%	57%	69%	66%	71%
Same	35%	24%	20%	31%	22%	28%	24%
More	5%	9%	7%	13%	9%	6%	6%
n=	159	674	645	571	726	713	763

Changing Commute Conditions

Respondents' were asked if their commute conditions had changed over the last year. These data appear to mirror economic conditions. When the economy was booming (1999–2001), commuters indicated that travel conditions were getting worse. In 2002, commute conditions began to change—for the better—as the economy slowed. The percentage of respondents indicating conditions were “better” in 2002 was greater than the percentage of respondents indicating conditions were “worse” for the first time. In 2003, respondents' perceptions of their commute conditions continued to improve. In 2004, as the economy has started to improve, a greater percentage of commuters are again saying conditions are staying the same or getting worse and fewer are saying conditions are better (Table 27).

Table 27
Commute Conditions

	1999	2000	2001	2002	2003	2004
Better	17%	14%	14%	29%	30%	23%
Same	51%	43%	42%	46%	52%	58%
Worse	32%	44%	43%	25%	18%	20%
n=	3,606	3,529	3,517	3,479	3,519	3,544

The most commonly cited reason for improved conditions for the third year in a row is lighter traffic (Table 28). However, the percentage of respondents indicating traffic was lighter has dropped from 60 percent in 2002, to 49 percent in 2003, to just over 30 percent this year. For those whose commute had gotten worse, “heavier traffic” was once again the most commonly cited reason. Just less than half of respondents indicated traffic was heavier. This is similar to last year but well below the 1999–2001 period when over 70 percent of respondents were indicating that traffic had gotten heavier.

Table 28
How Commute Has Gotten Better or Worse

Better		Worse	
Traffic lighter	31%	Traffic heavier	49%
Moved home/job location	24%	Moved home/job location	10%
Roadway improvements	11%	Construction delays	7%
Changed route	7%	Transit slower/crowded	7%
Better transit service	4%	Changed route	3%
Travel at different time	6%	Road maintenance	2%
Changed mode	6%	Travel at different time	2%
Less road work	3%	Changed mode	1%
Other	9%	Other	19%

County Comparisons

In eight of nine counties, the percentage of commuters reporting improved conditions over the last year has declined. Only in Solano County has the percentage increased slightly (from 16 percent to 18 percent). Commuters who live in Santa Clara and Alameda counties were most likely to report improved commute conditions (Table 29). Commuters who live in Napa County were the least likely to report improved conditions. Conditions changed the least for San Francisco and San Mateo commuters. About 30 percent of respondents from five counties (Solano, Contra Costa, Sonoma, Napa and Marin) indicated conditions had gotten worse over the last year. In 2003, only one county was in the 30 percent range while others were lower.

Table 29
Change in Commute Conditions by County

County	Better	Same	Worse
Alameda <i>n=397</i>	25%	54%	21%
Contra Costa <i>n=391</i>	20%	50%	30%
Marin <i>n=393</i>	15%	58%	27%
Napa <i>n=394</i>	12%	59%	28%
San Francisco <i>n=391</i>	16%	68%	16%
San Mateo <i>n=398</i>	19%	67%	14%
Santa Clara <i>n=392</i>	32%	57%	11%
Solano <i>n=390</i>	18%	52%	31%
Sonoma <i>n=394</i>	15%	56%	29%

Respondents commuting by transit, carpool or bicycle on a regular basis were asked if it is easier, about the same or more difficult to use those modes now than it was a year ago. Transit users' opinions changed little over the last year (Table 30). Carpoolers were the most positive about the use of their modes and showed small signs of improvement compared with last year. Most bicycle commuters indicated conditions had not changed much over the last year. There was a steep drop in the percentage of bicycle commuters indicating conditions were easier, but the sample size is too small to make much of it.

Table 30
Ease of Using Transit, Carpooling and Bicycling for Work Trip

	Easier	More Difficult	Same	Change From Last Year
Transit <i>n=448</i>	22%	20%	59%	=
Carpool <i>n=213</i>	25%	6%	70%	+
Bicycle* <i>n=32</i>	9%	13%	78%	-

* note small sample size for bicycle respondents

Parking and Employer Incentives

Identical to the last two years and similar to previous years almost eight of 10 respondents (79 percent) have free all-day parking available at or near their worksite. The influence on mode choice of destinations with and without free parking is substantial.⁷ Locations with free parking have a drive-alone rate of 74 percent, while those without free parking have a drive-alone rate of 35 percent (Table 31). The difference in transit use is even greater than the difference in the drive-alone rate. For those with free parking, the transit use rate is five percent; for those without, it jumps to 42 percent. The effect of paid parking (and the services associated with densely populated job centers) on the decision to drive one's car or use transit is substantial.

Table 31
 Free Parking and Travel Mode

	Free Parking Available	No Free Parking
Drive Alone	74%	35%
Carpool	17%	13%
Transit	5%	42%
Other	5%	10%
	n=2,799	n=759

The percentage of employers who encourage employees to use transit, carpool, bicycle and walk to work is consistent with earlier years (Table 32). *Commute Profile* data provide only an estimate of employer involvement because it is based on respondents' awareness and understanding of what their employer does. The sampling methodology is also designed to be representative of commuters from the nine counties—not necessarily a representative sample of all Bay Area employers. With this consideration, the data indicate that employers remain involved in providing commute assistance to their employees. The most common types of programs employers operate to encourage the use of commute alternatives are transit sales/subsidies and carpool or vanpool programs; incentives and tax breaks are also common programs employers offer to encourage the use of commute alternatives (Table 33).

Table 32
 Employers Who Encourage Use of Commute Alternatives

	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
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⁷ Although parking is the variable identified here, other conditions associated with parking are likely to have an influence on mode choice. In other words, paid parking may not be the causative variable itself—it may simply identify areas with specific characteristics. For example, in areas such as downtown San Francisco where free parking is scarce, there is also more transit service, more amenities within walking distance of offices and significant local congestion. The combination of conditions is what most likely influences behavior rather than any single factor.

Employers with Programs	34%	39%	41%	36%	39%	39%	41%	40%	39%	39%
n=	3,056	382	3,295	1,516	3,530	3,472	3,460	3,429	3,446	3,598

Table 33

Types of Employer Encouragement

Transit Ticket Sales/Subsidies	17%
Carpool or Vanpool Programs	16%
Incentives/Rewards	14%
Tax Breaks	14%
Provide Information	12%
Preferential carpool parking	6%
Bike Lockers/Shower	5%
Provides shuttle service	5%
Flexible Hours	3%
Support regional promotions	1%
Guaranteed Ride Home	1%
Encourage by example	1%
Limit parking supply	1%
Other	4%
	n=1,289

The drive-alone rate is about 13 percent lower at employer sites where the use of alternatives is encouraged (Table 34). The difference is considerably greater than the past few years where the difference was in the seven to eight percent range. The difference in the rate of transit use is greatest. Much of what employers do to encourage the use of commute alternatives relates to transit, such as transit ticket sales, transit ticket subsidies and tax breaks.

Table 34

Commute Modes with and without Employer Encouragement

	Drive Alone	Carpool	Transit	Other
Employer Encourages Alternative Modes n=1,388	58%	18%	18%	7%
Employer Does Not Encourage Alternative Modes n=2,048	71%	15%	10%	5%

Smaller employers, those with 50 or fewer employees, accounted for the largest percentage of respondents (Table 35). Just under half (47 percent) of respondents work for employers with 100 or fewer employees. The likelihood an employer will operate a program that encourages employees to use commute alternatives increases with employer size. Approximately a quarter (22 percent) of companies with fewer than 100 employees operate a

commute incentive program while almost 57% percent of larger companies (more than 100 employees) do something to encourage the use of commute alternatives.

Table 35
Employer Size

Employer Size (# of employees)	Percent of Respondents Employed	Percent Encouraging Alternatives Use
0 - 50	47%	22%
51 - 100	14%	36%
101 - 500	18%	49%
More than 500	21%	77%
<i>n=</i>	3,533	3,379

Vehicle availability

Almost all respondents (96 percent) to this survey have a vehicle available for their commute "always" or "sometimes" (Table 43a). For 89 percent a vehicle is always available. Availability varies a bit from county to county. San Francisco stands out as being the least auto dependent. Approximately 18 percent of San Francisco residents who responded to the survey "never" have a vehicle available for their commute. The variation between other counties is small. All Solano County respondents had vehicle availability at least some of the time.

As one might guess, vehicle availability has a strong influence on mode choice. For those who drive alone, 97 percent "always" have a vehicle available. For those who carpool, "always available" drops slightly to 92 percent, for those who use "other" modes it drops to 73 percent and for those who use transit as their primary commute mode it drops significantly to 59 percent.

Table 43a
Vehicle Availability by County

County	Always	Sometimes	Never
Alameda <i>n=398</i>	90%	6%	4%
Contra Costa <i>n=399</i>	91%	7%	2%
Marin <i>n=399</i>	95%	3%	2%
Napa <i>n=398</i>	93%	5%	2%
San Francisco <i>n=397</i>	69%	13%	18%
San Mateo <i>n=401</i>	94%	4%	2%
Santa Clara <i>n=399</i>	93%	6%	1%
Solano <i>n=400</i>	95%	5%	0%
Sonoma <i>n=400</i>	94%	4%	2%
Regional Average <i>n=3,590</i>	89%	7%	4%